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# *Adult Attachment as Mediator between Recollections of Childhood and Satisfaction with Life*

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In accordance with attachment theory, the present study investigates whether internal working models of attachment mediated the association between childhood memories and satisfaction about life in adulthood. A convenient sample of 437 participants completed questionnaires assessing a broad range of childhood memories, working models of attachment and life satisfaction. After controlling for demographics, relational status and living condition, Baron and Kenny's mediation criteria were met for the association between memories about childhood, adult attachment and life satisfaction. That is, family warmth and harmony and parental support were associated with attachment security while parental rejection and adverse childhood events (e.g., abuse, parental psychopathology) were associated with an insecure attachment style. More securely attached individuals were in turn more satisfied about their current life than insecurely attached individuals. Sobel test confirmed these findings. These findings are in accordance with attachment theory and highlight the importance of this theory for understanding how early childhood experiences may impact adult life. Copyright © 2008 John Wiley & Sons, Ltd.

## INTRODUCTION

According to attachment theory (Bowlby, 1969; Bowlby, 1973; Bowlby, 1985; Bowlby, 1988), internal working models of attachment stem from experiences in childhood and guide evaluations about life in adulthood. Although previous studies found direct associations between recollections about childhood experiences and adult functioning and well-being (Runkewitz, Kirchmann, & Strauss,

2006; Winefield, Tiggemann, & Winefield, 1994), attachment theory predicts that this association will be mediated by internal working models of attachment. Although few studies have investigated the association between adult attachment, childhood recollections and adult functioning, and well-being (Bifulco, Kwon, Jacobs, Moran, Bunn, & Beer, 2006; Hill, Young, & Nord, 1994); Magai, Consedine, Gillespie, O'Neal, & Vilker, 2004), these studies seem to support the mediating role of attachment. The aim of the present study was to further investigate internal working models of attachment as mediator between recollections of childhood and evaluations about life in adulthood. The present study extends previous studies by investigating a broad range of possible childhood recollections

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by focusing on life satisfaction in adulthood rather than on problem outcomes and by controlling for demographics (i.e. age, gender), relational status (i.e., whether or not participants are engaged in an intimate relationship), and living condition (i.e., with whom a participant is living). In the Introduction, we will briefly describe the relevant concepts of attachment theory, review the literature on the relationship between attachment, childhood memories and adult functioning, and, finally, we will describe the hypotheses that will be tested in the present study.

### Attachment Theory

According to attachment theory, as well as most other formal psychological theories (cognitive-behavioural theory, self-psychology, trauma theory), people internalize childhood experiences that centre around the interaction with caregivers, which results in mental representations that shape an individual's expectations, perceptions, reactions and behaviours throughout life (Kolk, 1996). Although different theories may use different terms, such as core assumptions (Janoff-Bulman, 1992), existential beliefs (Yalom, 1980), schema's (Beck, 1970) or internal working models (Bowlby, 1969), mental representations refer to the unquestioned beliefs that constitute the bedrock of our cognitive-emotional world (Platts, Tyson, & Mason, 2002). Internal working models of attachment are a specific set of mental representations about the self in interaction with others. These working models are believed to be relatively stable over time (Bowlby, 1969). A growing number of empirical studies show the relative stability of internal working models (Fraley, 2002; Klohnene & Bera, 1998; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000; Weinfield, Whaley, & Egeland, 2004) and provide even evidence for its biological substrate (Bradley, 2000; Fox & Card, 1999). Thus, internal working models are thought to be the mechanisms by which the influence of childhood experiences is sustained into adulthood.

In adulthood, internal working models of attachment are generally conceptualized as sets of global beliefs about the *self* (e.g., as worthy of care and lovable) and about *others* (e.g., as trustworthy and caring) (Bartholomew & Horowitz, 1991; (Griffin & Bartholomew, 1994). In terms of their affective-motivational characteristics, these global beliefs are referred to as *anxiety* about rejection and abandonment and *avoidance* of intimacy and interdependence (Crowell, Fraley, & Shaver, 1999).

These two dimensions can be combined into four attachment styles—one secure and three insecure subtypes: preoccupied, dismissing and fearful (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994).

### Adult Attachment and Childhood Recollections

Since working models originate from childhood events, it could be expected that secure and insecurely attached adults will report different experiences during childhood (Collins, Guichard, Ford, & Feeney, 2004). Specifically, secure people are bound to describe their family of origin as more positive than insecure individuals (Diehl, Elnick, Bourbeau, & Labouvie-Vief, 1998). Among a group of 361 young adults, Perris and Andersson (2000) investigated the association between recollected experiences of parental rearing and patterns of attachment in adulthood. The EMBU questionnaire, a Swedish acronym for 'own memories of parental rearing', was used to assess recollections about parental rearing, and three different attachment measures (Adult Attachment Scale, Attachment Style Questionnaire and Reciprocal Attachment Questionnaire) were used to assess adult attachment patterns. The recollection of parental support was found to be associated with attachment security, while dysfunctional parenting (i.e., rejection) was associated with insecure attachment. These findings were consistent across the three attachment measures and independent of whether the relationship with father or mother was taken into account. Similarly, Heinonen, Raikonen, Keltikangas-Jarvinen, and Strandberg (2004) showed that adult attachment was associated with family context. Namely, attachment anxiety was negatively related with recalled parental warmth and supportive parental care and positively with overprotection, conflictual family context and inconsistent parental care.

In addition to parental rearing behaviour and family context, adverse childhood events have been found to be associated with insecure attachment (Luecken, 2000; Mulhern, Wasserman, Friedman, & Fairclough, 1989; Styron & Janoff-Bulman, 1997). Specifically, Mickelson, Kessler, and Shaver (1997) showed that parental divorce, poor quality of the parental relationship (e.g., violence between parents), the presence of parental psychopathology (e.g., depression, alcohol abuse) and interpersonal traumas (e.g., sexual and physical abuse, neglect) were positively related to attachment anxiety and attachment avoidance.

### ***Adult Attachment and Adult Functioning***

As a function of an individual's adult attachment style, people have been found to differ systematically in how they describe themselves (Diehl et al., 1998), in how they mobilize and utilize relationships (e.g., Collins & Feeney, 2000; Feeney & Collins, 2004), and in the way they experience and respond to stressors (e.g., Ciechanowski, Sullivan, Jensen, Romano, & Summers, 2003; Fraley, Garner, & Shaver, 2000; Hunter & Maunder, 2001; Mikulincer & Florian, 1998). In general, more secure people describe themselves in more positive terms, perceive others as available, and respond to stressors with less distress and more problem-focused strategies. Conversely, insecure attachment has been found to be a risk factor for depression (Bifulco, Moran, Ball, & Bernazzani, 2002; Bifulco, Moran, Ball, & Lillie, 2002) and for engaging in more negative relationships that provide less support and more conflict (Gallo, Smith, & Ruiz, 2003). Most attachment research is aimed at explaining negative or problematic outcomes, such as psychopathology or relationship problems. Much less emphasis has been put on positive outcomes, such as life satisfaction (see for an exception, Mikulincer & Sheffi, 2000), which may be an important psychological resource when confronted with adversities.

### ***Adult Attachment as Mediator between Childhood Recollections and Adult Functioning***

Adult attachment style has not only been found to be associated with memories about childhood and functioning in adulthood, but also to mediate the association between childhood memories and adult functioning. For example, in a recent study, Bifulco et al. (2006) examined in a group of 154 community women who were at risk for an affective disorder whether adult insecure attachment mediated the relationship between childhood neglect and the actual occurrence of affective disorders. These authors showed that childhood neglect and abuse was associated with an increased risk for developing an affective disorder and that this association became non-significant when insecure attachment was taken into account. These results indicate that insecure attachment mediates the association between adverse childhood experiences and the risk of developing an affective disorder. In accordance, Magai et al. (2004) investigated the association between adult attachment, early emotional

socialization (i.e., recollections about mother as punitive or rewarding), and positive or negative trait emotions in a large population ( $n = 1237$ ) of adults. They found that the association between early socialization and trait emotionality in adulthood was (partly) mediated by adult attachment. Specifically, recollections about mother as punitive and unrewarding were associated with attachment insecurity, which was in turn associated with negative affectivity. Moreover, in a small group ( $n = 40$ ) of young adults, Hill et al. (1994) showed that adult insecurity was associated with early social relationships (e.g., poor relationship with mother) and with relationships in adulthood (e.g., divorce). These authors conclude that adult attachment was a useful construct for linking early social experiences with relationship functioning in adulthood.

### ***Present Study***

In accordance with the aforementioned literature, we expected internal working models of attachment to mediate the association between childhood recollections and satisfaction about adult life. Specifically, we hypothesized that the recollection of less family harmony and openness and more dysfunctional parenting behaviour would be associated with more attachment anxiety and attachment avoidance, which in turn would be associated with less satisfaction about life. Similarly, we hypothesized that attachment anxiety and attachment avoidance would carry the impact of adverse childhood events (e.g., separation-loss, interpersonal trauma's, parental psychopathology) on life satisfaction in adulthood. In contrast with most previous studies, we did control for age, gender, whether or not a participant is engaged in an intimate relationship, and with whom one is living, as these variables may be associated with both adult attachment and life satisfaction. If the hypotheses are supported, the present study holds to the idea that childhood adversities may impact adult life through affecting people's attachment styles.

## **METHOD**

### ***Procedure and Participants***

An announcement of the study with a web link was placed on the homepage of a popular Dutch psychological magazine. People were invited to participate in a study investigating the association

between childhood experiences and functioning in adulthood. This recruitment procedure resulted in 611 individuals visiting the web site containing the questionnaires. Of these individuals, 437 (71.5% of the total number of visitors) completed the questionnaire.

## Measures

### Family Context

Recollections about the family of origin were assessed using the Family of Origin Scale-Dutch (FOS-DLange, Bollema, & Fluri, 2004; Lange, Kiss, Jansen, & Neerschoten, 2003). The FOS-D consists of 22 items assessing openness (e.g., I could express my opinion within my family of origin) and harmony (e.g., I remember my family as warm and understanding) in the family of origin. Response alternatives ranged from 'strongly disagree' (1) to 'strongly agree' (5). Cronbach's alpha was 0.97.

### Parental Rearing Behaviour

Memories about ones upbringing were assessed using the short version of the Egena Minnen Betreffande Uppfostran (EMBU) (Winefield et al., 1994). The short EMBU consists of three subscales, the supportive scale, the rejection scale and the overprotection scale. The supportive scale is measured with six items (e.g., My parents usually praised me), the rejection scale is measured with eight items (e.g., It happened that my parents were sour and angry with me without letting me know the reason) and the overprotection scale is measured with nine items (e.g., It happened that I wished that my parents would worry less about what I was doing). Response alternatives ranged from 'no, never' (1) to 'yes, always' (4). Cronbach's alpha for the supportive scale was 0.91, for the rejection scale 0.90 and for the overprotection scale 0.79.

### Childhood Adversities

Childhood adversities were assessed with a list of 20 adverse childhood experiences (e.g., divorce of parents, physical abuse, neglect). Participants were asked to indicate whether these events happened before the age of 16. Response alternatives were yes (1) and no (0).

### Adult Attachment Style

Participants were asked to complete the Experience in Close Relationship-Revised Questionnaire (ECR-R). The ECR-R is currently the most recommended self-report measure (Fraley, Waller, &

Brennan, 2000) with good psychometric properties and temporal stability (Sibley & Liu, 2004; Sibley, Fischer, & Liu, 2005). The ECR-R consists of two subscales, attachment anxiety (e.g., I'm afraid that I will lose my partner's love) and attachment avoidance (e.g., I prefer not to show a partner how I feel deep down) and both dimensions are assessed with 18 items. Response alternatives ranged from 'strongly disagree' (1) to 'strongly agree' (5). Cronbach's alpha for both the anxiety and avoidance dimension was 0.92.

### Life Satisfaction

Life satisfaction was assessed with three questions (i.e., I am satisfied about myself, I have a good feeling about my current life and I am satisfied about my relationships). Response alternatives ranged from 'strongly disagree' (1) to 'strongly agree' (5). A mean score was made, and Cronbach's alpha for the three questions was 0.78.

## Statistical Analysis

First, to control for possible confounding, we tested the association between, on the one hand, demographics (i.e., age, gender), current relationship status (i.e., being engaged in an intimate relationship or not) and living condition (i.e., living alone, living with partner with or without children, living with children without partner, living with someone else), and, on the other hand, attachment anxiety, attachment avoidance and life satisfaction. Pearson's correlations and analyses of variance with *post hoc* tests were used. Next, multiple hierarchical regression analyses were performed to test the hypotheses. Linear regression analysis, which included an anxiety  $\times$  avoidance interaction term, demonstrated that the contribution of this interaction on life satisfaction was non-significant ( $p = 0.764$ ). Therefore, the reported regression analyses exclude the interaction term.

For adult attachment to be a mediator of childhood recollections and life satisfaction, four criteria, as proposed by Baron and Kenny (1986), should be met: (1) childhood recollections should be significantly associated with adult attachment; (2) adult attachment should be significantly associated with life satisfaction; (3) childhood recollections should be significantly associated with life satisfaction; and (4) controlling for adult attachment, the association between childhood recollections and life satisfaction should be reduced or be no



longer significant. Sobel test (Sobel, 1990) was used to determine whether the reduction in the association between childhood recollections and life satisfaction was significant. The criteria proposed by Baron and Kenny, and the use of the Sobel test are well established and widely used. Furthermore, a series of linear regression analyses and Sobel tests were used to individually test the association between a broad range of adverse childhood events, adult attachment and life satisfaction after controlling for demographics, relationship status and living condition.

## RESULTS

### *Demographics*

More than 90% of the 437 participants were female ( $n = 398$ ), and the average age was 37 (range 18–69). A large group of participants was married ( $n = 188$ ) or had a stable intimate relationship ( $n = 178$ ), leaving 16% ( $n = 71$ ) of the participants without a current intimate relationship. Most of the participants lived with their partner either with ( $n = 157$ ) or without children ( $n = 142$ ). A small group of participants ( $n = 35$ ) reported living with their children but without a partner and 82 participants reported living alone. The remaining participants ( $n = 21$ ) reported living with someone else (e.g., parents).

Pearson's correlations showed that age was not associated with attachment anxiety, attachment avoidance or life satisfaction. While women ( $M = 2.61$ , standard deviation [SD] = 0.88) reported marginally more attachment anxiety than men ( $M = 2.32$ , SD = 0.81),  $t(435) = -2.01$ ,  $p = 0.045$ , women and men did not differ on attachment avoidance or life satisfaction. Analysis of variance revealed that current relationship status was associated with attachment anxiety ( $F[2] = 23.70$ ,  $p < 0.001$ ), attachment avoidance ( $F[2] = 10.32$ ,  $p < 0.001$ ) and life satisfaction ( $F[2] = 12.37$ ,  $p < 0.001$ ). *Post hoc* tests showed that people without an intimate relationship reported more attachment anxiety ( $M = 3.14$ , SD = 0.80), more attachment avoidance ( $M = 2.30$ , SD = 0.84) and less life satisfaction ( $M = 3.20$ , SD = 0.98) than people who were married ( $M = 2.35$ , SD = 0.80;  $M = 1.89$ , SD = 0.71;  $M = 3.82$ , SD = 1.05, respectively) or in a stable intimate relationship ( $M = 2.61$ , SD = 0.87;  $M = 1.86$ , SD = 0.70;  $M = 3.82$ , SD = 0.84, respectively). Participants who were married and those in a stable intimate relationship did not differ significantly from each other. Furthermore, living condition was also associated

with attachment anxiety ( $F[4] = 13.92$ ,  $p < 0.001$ ), attachment avoidance ( $F[4] = 6.91$ ,  $p < 0.001$ ) and life satisfaction ( $F[2] = 5.63$ ,  $p < 0.001$ ). *Post hoc* test revealed that people who lived with their partner, either with ( $M = 2.42$ , SD = 0.83) or without ( $M = 2.36$ , SD = 0.80) children, reported less attachment anxiety than people who lived without a partner but with children ( $M = 3.09$ , SD = 0.75), lived alone ( $M = 2.98$ , SD = 0.87) or with someone else ( $M = 3.04$ , SD = 0.89). People who lived with their children but without a partner reported more attachment avoidance ( $M = 2.42$ , SD = 0.96) than the other groups. Those living with their children but without a partner reported the least life satisfaction ( $M = 3.28$ , SD = 0.92), while those living with a partner, either with ( $M = 3.74$ , SD = 0.99) or without ( $M = 3.97$ , SD = 0.94) children, reported most satisfaction. Table 1 shows the correlations and partial correlations (between parentheses) between the main study variables.

### *Family Context, Parental Support, Adult Attachment and Life Satisfaction*

The *first criterion* that should be met for attachment to mediate the association between childhood recollections (i.e., family context and parental support) and life satisfaction states that childhood recollections should be significantly associated with adult attachment. Table 2 shows that controlling for demographics, relationship status and living condition, more recollections about openness and harmony in the family of origin were associated with less attachment anxiety and with less attachment avoidance. Recollections about parental rejection were found to be significantly associated with more attachment anxiety, while parental support was associated with less attachment avoidance. Parental overprotection was not associated with adult attachment. Table 3 shows the association between childhood recollections and life satisfaction after excluding statistically redundant variables. These results show that the first criterion for mediation was met for family context, parental rejection and for parental support. Parental overprotection was not found to be associated with either attachment anxiety or attachment avoidance, and was therefore excluded from subsequent analyses.

The *second criterion* states that adult attachment should be significantly associated with life satisfaction. Regression analysis showed that attachment anxiety and attachment avoidance both were significantly associated with life satisfaction

Table 1. Correlations among the variables under study

	Attachment anxiety	Attachment avoidance	Family context	Parental support	Parental rejection	Parental overprotection	Life satisfaction
Attachment anxiety	0.58**						
Attachment avoidance	-0.41** (-0.21**) <sup>1</sup>	-0.44** (-0.28**) <sup>2</sup>					
Family context	-0.37** (-0.15**) <sup>1</sup>	-0.44** (-0.30**) <sup>2</sup>	0.83**				
Parental support	0.39** (0.24**) <sup>1</sup>	0.36** (0.18**) <sup>2</sup>	-0.71**	-0.62**			
Parental rejection	0.16** (0.19**) <sup>1</sup>	0.01 (-0.10*) <sup>2</sup>	-0.22**	0.39**	-0.05		
Parental overprotection	-0.62** (-0.45**) <sup>1</sup>	-0.52** (-0.26**) <sup>2</sup>	0.34**	-0.29**	0.33**	-0.07	
Life satisfaction	2.59	1.94	3.00	2.50	1.70	2.37	3.72
Mean	0.87	0.74	1.00	0.84	0.70	0.59	0.98
SD							

\*Correlation is significant at 0.05 level. \*\*Correlation is significant at the 0.01 level.

<sup>1</sup>Between parentheses partial correlation controlling for attachment avoidance.<sup>2</sup>Between parentheses partial correlation controlling for attachment anxiety.

SD = standard deviation.

Table 2. Association between attachment anxiety, attachment avoidance, family context and parental rearing behaviour

	Attachment anxiety			Attachment Avoidance		
	$\Delta R^2$	$\Delta F$ ( $p$ -value)	$\beta$ ( $p$ -value) <sup>1</sup>	$\Delta R^2$	$\Delta F$ ( $p$ -value)	$\beta$ ( $p$ -value) <sup>1</sup>
Step 1						
Age	0.13	10.60 ( $p < 0.001$ )	-0.11 ( $p = 0.02$ )	0.07	5.32 ( $p < 0.001$ )	-0.02 ( $p = 0.70$ )
Gender			0.06 ( $p = 0.18$ )			0.04 ( $p = 0.39$ )
Intimate relationship (yes = 1, no = 0)			-0.10 ( $p = 0.08$ )			-0.09 ( $p = 0.14$ )
Living with children but no partner (yes = 1, no = 0)			-0.07 ( $p = 0.31$ )			0.01 ( $p = 0.88$ )
Living alone (yes = 1, no = 0)			-0.04 ( $p = 0.68$ )			0.01 ( $p = 0.89$ )
Living with partner (yes = 1, no = 0),			-0.27 ( $p = 0.00$ )			-0.09 ( $p = 0.34$ )
Step 2						
Family context	0.17	25.58 ( $p < 0.001$ )	-0.20 ( $p = 0.01$ )	0.19	26.41 ( $p < 0.001$ )	-0.21 ( $p = 0.02$ )
Parental rejection			0.13 ( $p = 0.04$ )			0.10 ( $p = 0.13$ )
Parental support			-0.12 ( $p = 0.13$ )			-0.20 ( $p = 0.01$ )
Parental overprotection			0.06 ( $p = 0.17$ )			-0.08 ( $p = 0.09$ )

<sup>1</sup>Beta coefficients of the final step are presented.

Table 3. Association between attachment anxiety, attachment avoidance, family context and parental rejection

	Attachment anxiety		
	$\Delta R^2$	$\Delta F$ ( $p$ -value)	$\beta$ ( $p$ -value)
Step 1	0.11	27.58 ( $p < 0.001$ )	
Age			-0.11 ( $p = 0.01$ )
Living with partner (yes = 1, no = 0)			-0.28 ( $p < 0.001$ )
Step 2	0.17	51.13 ( $p < 0.001$ )	
Family context			-0.28 ( $p < 0.001$ )
Rejection			0.17 ( $p = 0.002$ )
	Attachment avoidance		
	$\Delta R^2$	$\Delta F$ ( $p$ -value)	$\beta$ ( $p$ -value)
Step 1	0.21	58.67 ( $p < 0.001$ )	
Family context			-0.24 ( $p = 0.002$ )
Support			-0.25 ( $p < 0.001$ )

Table 4. Adult attachment as mediator between childhood recollections and life satisfaction

		$\beta$	SE	$p$ -value	Sobel test z-score
1	Family context (predictor) $\rightarrow$ anxiety (mediator) $\rightarrow$ life satisfaction (outcome)	0.10	0.002	$p = 0.01$	5.46***
2	Family context (predictor) $\rightarrow$ avoidance (mediator) $\rightarrow$ life satisfaction (outcome)	0.13	0.002	$p < 0.01$	2.57**
3	Parental rejection (predictor) $\rightarrow$ anxiety (mediator) $\rightarrow$ life satisfaction (outcome)	-0.05	0.007	$p = 0.19$	-3.03**
4	Parental support (predictor) $\rightarrow$ avoidance (mediator) $\rightarrow$ life satisfaction (outcome)	0.11	0.009	$p = 0.01$	3.11**

Note: Regression equations were controlled for demographics, current relationship status and living condition.  
SE = Standard Error.

( $\beta = -0.48$ ,  $p < 0.001$  and  $\beta = -0.25$ ,  $p < 0.001$ ), explaining 42% of the variance in life satisfaction ( $p < 0.001$ ). Thus, the second criterion for mediation was also met. Age, gender, whether or not participants were engaged in an intimate relationship, or with whom they are living did not add to the explained variance in life satisfaction already explained by adult attachment.

Next, in accordance with the *third criterion*, we investigated whether childhood recollections (i.e., family context, parental rejection and parental support) were related with life satisfaction after controlling for demographics, relationship status and living condition. Multiple regression analyses showed that family context ( $\beta = 0.32$ ,  $p < 0.001$ ), parental rejection ( $\beta = -0.27$ ,  $p < 0.001$ ) and parental support ( $\beta = 0.30$ ,  $p < 0.001$ ) were all significantly associated with satisfaction about life in adulthood, explaining, respectively, 10%, 7% and 9% of the

variance in life satisfaction. Thus, the third criterion for mediation was also met.

Finally, the *fourth criterion* states that for attachment to be a mediator, the association between childhood recollections and life satisfaction should be reduced or no longer significant when controlling for adult attachment. Table 4 shows that this final criterion was also met. The strength of the association between, on the one hand, family context, parental rejection, parental support, and, on the other hand, life satisfaction, decreased when attachment anxiety and attachment avoidance were included as mediator. In other words, the beta coefficients of the associations between childhood recollections and life satisfaction decreased when adult attachment was entered into the regression model. Sobel test confirmed these findings and showed that the decrease in beta coefficients was significant (see Table 4). The beta coefficients of



Table 5. Association between childhood adversities, adult attachment ratings and life satisfaction

	<i>n</i> (%)	Attachment				Life satisfaction		Sobel test	
		Anxiety		Avoidance				Anxiety	Avoidance
		$\beta$	SE	$\beta$	SE	$\beta$	SE	z-score	z-score
Separation-loss									
Death of parent	42 (9.6)	-0.02	0.14	0.03	0.12	0.02	0.16		
Parental divorce	67 (15.3)	0.21***	0.11	0.11*	0.10	-0.09*	0.13	-4.15***	-2.10*
Long absence parent	40 (9.2)	0.16**	0.14	0.12*	0.12	-0.07	0.16		
Sudden death friend, relative	38 (8.7)	0.04	0.15	0.02	0.13	-0.07	0.17		
Childhood miscarriage	4 (0.9)	-0.02	0.44	-0.04	0.37	0.04	0.49		
Childhood abortion	6 (1.4)	0.07	0.36	0.08	0.31	-0.16**	0.40		
Interpersonal traumas									
Neglect	48 (11)	0.25***	0.13	0.23***	0.11	-0.21***	0.15	-4.67***	-3.59***
Physical abuse	41 (9.4)	0.22***	0.14	0.22***	0.12	-0.17***	0.16	-4.22***	-3.62***
Sexual abuse	54 (12.4)	0.22***	0.12	0.18***	0.11	-0.20***	0.14	-4.42***	-3.07**
Rape	17 (3.9)	0.15**	0.21	0.08	0.18	-0.17***	0.21	-3.12**	
Threatened with death	7 (1.6)	0.08	0.33	0.14**	0.28	0.06	0.38		
Childhood pregnancy	2 (0.5)	-0.02	.62	0.02	0.53	-0.05	0.70		
Parental psychopathology									
Depression	109 (24.9)	0.20***	0.10	0.17**	0.08	-0.14**	0.11	-3.88***	-2.95**
Alcohol abuse	67 (15.3)	0.13***	.12	0.12*	0.10	-0.03	0.13		
Parents' relationship									
Constant rows between parents	140 (32)	0.24***	0.09	0.23***	0.07	-0.16**	0.10	-4.44***	-3.73***
Violence between parents	57 (13)	0.12*	0.12	0.10*	0.11	-0.06	0.14		
Other trauma's									
Serious physical illness parent	66 (15.1)	0.00	0.12	-0.06	0.01	0.03	0.13		
Serious physical illness as a child	18 (4.2)	-0.04	0.21	-0.03	0.18	0.08	0.24		
Serious financial problems parents	69 (15.8)	0.16**	0.11	0.13**	0.10	-0.11*	0.13	-3.37***	-2.40*
Life-threatening accident	9 (2.1)	0.04	0.29	0.04	0.25	-0.03	0.33		

\*Correlation is significant at 0.05 level. \*\*Correlation is significant at the 0.01 level. \*\*\*Correlation is significant at the 0.001 level.  
SE = Standard Error.

family context and parental support decreased, but remained significant, and both variables still explained 1% of the variance in life satisfaction when attachment was controlled for. This indicates that the association between these childhood recollections and satisfaction in adulthood was *partly* mediated by attachment. In contrast, the association between parental rejection and satisfaction was completely mediated by attachment avoidance. The beta coefficient of parental rejection was no longer significant, and parental rejection did no longer explain variance in life satisfaction when attachment avoidance was controlled for.

### Childhood Adversity, Attachment and Life Satisfaction

Table 5 shows the regression coefficients of 20 different adverse childhood events on attachment anxiety, attachment avoidance and life satisfaction. Some recollections about separation and loss

experiences (i.e., parental divorce and separation from parent), most interpersonal traumas, the presence of parental psychopathology and quality of the parental relationship were all related with attachment anxiety, attachment avoidance and satisfaction about life. Multiple regression analyses showed that the associations between adverse childhood events and life satisfaction that were found to be significant all became non-significant when attachment was entered into the equation. Sobel tests revealed that the decrease in beta coefficients were significant. These results indicate that adult attachment mediates the association between recollections about adverse childhood events and life satisfaction.

### DISCUSSION

In the present study, memories about childhood were found to explain adult attachment, which in turn explained life satisfaction. That is, people

who reported more parental rejection, less parental support, less family warmth and harmony, and more adverse childhood events were more insecurely attached. More insecurely attached adults were, in turn, less satisfied about themselves, their current relationships and their life in general. This remained true after controlling for age, gender, whether or not participants had an intimate relationship, and with whom they were living (e.g., alone, with a partner, with children but no partner). These findings are in accordance with attachment theory and with a broad range of studies showing that insecurely attached individuals report worse childhood conditions and more emotional and relational problems in adulthood (Bradley, 2000; West & Sheldon-Keller, 1994).

The present findings are also in line with the broader contemporary psychological insight that presumes that early childhood experiences shape the development of cognitive-motivational models about the self, others and the world around (Vygotsky, 1978). For example, Catlin & Epstein (1992) showed that the recollection of favourable childhood relationships with parents was associated with more positive beliefs about the self. Sarason, Pierce, Shearin, Sarason, and Waltz (1986, 1991) found that expectations about the availability of others are stable over long periods of time and are related to parental attitudes during infancy. That is, individuals who reported more favourable experiences with parental support during infancy have more confidence in the availability of attachment figures in adulthood. Neal and Frick-Horbury (2001) showed that individuals who reported to have received authoritative parenting (e.g. sensitive to the child's needs, does not use punitive discipline, and reasons with the child in a loving and affectionate manner) perceive others as significantly more accessible, trustworthy and responsive in comparison with those individual whose parents were perceived as authoritarian or permissive.

Although the cross-sectional design of the present study cautions our interpretations, the present results seem to be in line with the notion that peoples' attachment style (secure, preoccupied, avoidant, fearful) is associated with specific developmental experiences (Collins et al., 2004). That is, people with a secure attachment style (i.e. low on attachment anxiety and low on attachment avoidance) may have learned from parents who were sufficiently supportive, responsive and sensitive that others will be available (Mikulincer, Shaver, & Pereg, 2003) and that they are worthy of the care and love of others (Park, Crocker, & Mickelson,

2004). In contrast, people with a preoccupied and fearful attachment style (i.e., high on attachment anxiety) who remember their parents as critical, rejecting and less warm may have learned to seek the approval (Park et al., 2004) and fear the rejection and abandonment of others (Bartholomew & Horowitz, 1991; Griffin & Bartholomew, 1994). People with a dismissing and fearful attachment style (i.e., high on attachment avoidance) may have learned to be self-reliant with a tendency not to seek support and care (Shaver & Mikulincer, 2005; West & Sheldon-Keller, 1994) as their parents were absent and unresponsive.

Furthermore, we found that most but not all adverse childhood events were related with attachment anxiety and attachment avoidance. The similarity of our findings with those of Mickelson et al.'s (1997) study among a representative American sample are remarkable. In both studies, some separation-loss experiences (i.e., parental divorce, long absence parent), but not others (i.e., death of parent, childhood miscarriage, childhood abortion), were associated with adult attachment. Also, in both studies, interpersonal trauma's (i.e., neglect, physical and sexual abuse), parental psychopathology (i.e., depression, alcohol abuse), the quality of the parental relationship (i.e., constant rows between parents, violence between parents) and financial problems were all related with adult attachment. We extended the study by Mickelson by showing that most of these adverse childhood events were also related with life satisfaction in adulthood and that this association disappeared when adult attachment was taken into account.

Due to the cross-sectional design of the present and most previous studies (see for exceptions Waters et al., 2000; Weinfield et al., 2004), the issue of causality between childhood memories, adult attachment and life satisfaction cannot be answered. There might be an alternative explanation for the association between childhood memories and adult attachment. It has been argued that the ability to recall past experiences may be associated with adult attachment representations. That is, more avoidant individuals have been suggested to encode less emotional information than non-avoidant adults (Fraley et al., 2000) and may find it more difficult to retrieve attachment memories (Edelstein, Ghatti, Quas, Goodman, Alexander, Redlich, & Cordon, 2005; Mikulincer & Orbach, 1995). In contrast, more anxiously attached individuals have been suggested to be hyper-vigilant regarding experiences that signal rejection

and abandonment (Mikulincer & Orbach, 1995), and may have instant access to negative, but not positive, experiences. Hence, people with different attachment representations may differ in the cognitive accessibility of attachment-related experiences (Collins et al., 2004). Thus, attachment anxiety and attachment avoidance may impact which childhood experiences are remembered.

Although the present study has some clear strengths, such as a using broad range of childhood memories, controlling for relevant variables and focusing on life satisfaction rather than problem outcomes, it also has some limitations. In the present study, participants were approached through a website of a popular psychological magazine and had knowledge of the general study focus. Consequently, the present sample may not be representative for the Dutch population in general, which may have impacted the results. Furthermore, most participants were females, which also might have influenced the results, as gender may impact the recollection of childhood memories (Davis, 1999). Moreover, life satisfaction was measured with only three questions. Future studies may use a more elaborate instrument to measure life satisfaction.

Despite these limitations, the present results highlight the utility of attachment theory for understanding how early childhood experiences may impact adult life. Attachment theory may not only help explain why some people may be more vulnerable in adulthood than others; it may also offer suggestion about how to help those at risk (Bowlby, 1988). In recent years, a growing number of scholars have written about the utility of attachment theory in optimizing care for patients with health and mental problems. For example, Hunter & Maunder, (2001), offers examples of how attachment theory may guide the psychological management of patients with medical and surgical illnesses. Others have suggested an attachment perspective to guide the patient–physician relationship (Tan, Zimmermann, & Rodin, 2005; Thompson & Ciechanowski, 2003), as well as the therapeutic relationship in psychotherapy (Holmes, 2001; Slade, 1999). In future studies, these suggestions should be extended and empirically tested.

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